

# United States Patent [19]

Miyamoto et al.

[54] VIDEO GAME SYSTEM AND METHOD WITH ENHANCED THREE-DIMENSIONAL CHARACTER AND BACKGROUND CONTROL DUE TO ENVIRONMENTAL CONDITIONS

[75] Inventors: Shigeru Miyamoto; Yasunari Nishida; Takumi Kawagoe; Satoshi Nishiumi,

all of Kyoto, Japan

[73] Assignee: Nintendo Co., Ltd., Kyoto, Japan

[\*] Notice: This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C.

154(a)(2).

[21] Appl. No.: 08/870,100 [22] Filed: Jun. 5, 1997

## Related U.S. Application Data

Continuation-in-part of application No. 08/562,288, Nov. [63] 22, 1995, and a continuation-in-part of application No. 22, 1995, and a continuation-in-part of application No. 08/719,019, Sep. 24, 1996, and a continuation-in-part of application No. PCT/JP96/02931, Oct. 9, 1996, and a continuation-in-part of application No. 08/765,474, Apr. 29, 1997, and a continuation-in-part of application No. PCT/JP96/02726, Sep. 20, 1996, and a continuation of application No. 08/857,882, May 16, 1997

Provisional application No. 60/043,756, Apr. 9, 1997.

Int. Cl.<sup>7</sup> ...... A63F 9/22 U.S. Cl. ...... 463/32; 463/31; 463/7; [52] 345/474

Field of Search ...... 463/31, 30, 32, 463/34, 7; 345/473, 474, 475, 121, 123, 125, 126

[56] References Cited

U.S. PATENT DOCUMENTS

D. 316.879 5/1991 Shulman et al. . D. 317,946 7/1991 Tse.

(List continued on next page.)

#### **Date of Patent:** [45]

Patent Number:

\*Oct. 31, 2000

[11]

6,139,433

#### FOREIGN PATENT DOCUMENTS

90881/91 11/1990 Australia .

(List continued on next page.)

#### OTHER PUBLICATIONS

"Analog Joystick Interface Emulation Using a Digital Counter", IBM technical Disclosure Bulletin, vol. 37, No. 08, Avg. 1994, pp. 73-74.

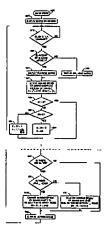
(List continued on next page.)

Primary Examiner—Michael O'Neill Attorney, Agent, or Firm-Nixon & Vanderhye P.C.

#### ABSTRACT

A video game system includes a game cartridge which is pluggably attached to a main console having a main processor, a 3D graphics generating coprocessor, expandable main memory and player controllers. A multifunctional peripheral processing subsystem external to the game microprocessor and coprocessor is described which executes commands for handling player controller input/output to thereby lessen the processing burden on the graphics processing subsystem. The video game methodology involves game level organization features, camera perspective or point of view control features, and a wide array of animation and character control features. The system changes the "camera" angle (i.e., the displayed point of view in the three-dimensional world) automatically based upon various conditions and in response to actuation of a plurality of distinct controller keys/buttons/switches, e.g., four "C" buttons in the exemplary embodiment. The control keys allow the user at any time to move in for a close up or pull back for a wide view or pan the camera to the right and left to change the apparent camera angle. Such user initiated camera manipulation permits a player to better judge jumps or determine more precisely where an object is located in relation to the player controlled character. The video game system and methodology features a unique player controller, which permits control over a character's exploration of the three-dimensional world to an unprecedented extent. A player controlled character may be controlled in a multitude of different ways utilizing the combination of the joystick and/or cross-switch and/or control keys and a wide range of animation effects are generated.

### 25 Claims, 57 Drawing Sheets



04/10/2004, EAST Version: 1.4.1